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**DOES NOT CONTAIN CBI**

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December 22, 2010

**Hand Delivery**

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EPA East - Room 6428  
Attn: 8(e) Coordinator  
U.S. Environmental Protection Agency  
1201 Constitution Avenue, NW  
Washington, DC 20004-3302



12/22/10 10:19 AM  
EPA/6428

**Re: TSCA 8(e) Submission for Vanadium Pentoxide (CASRN 1314-62-1)**

Dear Sir or Madam:

The Vanadium Producers & Reclaimers Association (VPRA) hereby submits to the United States Environmental Protection Agency (EPA) a Toxic Substances Control Act (TSCA) section 8(e), 15 U.S.C. § 2607(e), submission for preliminary results from an acute inhalation toxicity study on granular vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>). This filing is part of a systematic investigation to establish acute toxicology LC<sub>50</sub> cut-off values (mg/L) for several vanadium compounds. These substances have not previously been subject to this kind of testing and results are being generated within a range of acute exposure levels that EPA advises should be considered for 8(e) reporting. As a result, several 8(e) filings have been made already in conjunction with this systematic testing program.

More specifically, the data being submitted today are the most recent results from a single study to establish an LC<sub>50</sub> cut-off value for vanadium pentoxide. Previous reporting results in rats and/or mice were filed on April 9, 2010, August 12, 2010, and November 9, 2010 and addressed a higher acute exposure level.

In the data being submitted today, mortality was observed only in female mice at 0.05 mg/L. These data establish an effective LC<sub>50</sub> acute concentration for V<sub>2</sub>O<sub>5</sub>, where previous reports did not. As such, no additional testing is contemplated for this substance.

These data were transmitted to VPRA members on December 1, 2010. We note that the brief time difference between the generation of lab results and their transmission to VPRA members is attributed to internal quality control and communication procedures

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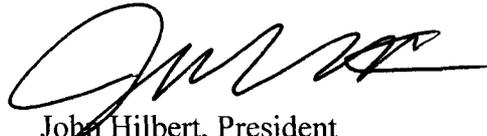
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December 22, 2010  
Page 2

established for VPRA's testing program. We have enclosed draft, unaudited mortality tables, clinical observations, and gross pathology from the test lab, IIT Research Institute. In the attached tables provided by the testing laboratory, note that the day numbers stated in the tables are for internal laboratory project tracking purposes only, and are unrelated to the actual study time for the study being reported. This acute study had a 15 day observation period.

No acute toxicity data have previously been publicly available for this substance at the 0.05 mg/L exposure level, so these data represent new information for this substance.

Sincerely yours,

A handwritten signature in black ink, appearing to read "John Hilbert", with a stylized flourish at the end.

John Hilbert, President  
Vanadium Producers & Reclaimers Association

Enclosures

Advanced Technology Institute  
Study 2246 SN3

1  
November 17, 2010 14:45  
ToxData© System V 2.1.E.11

Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
in Mice

**Individual Body Weights - BW / Body Weights [g]**

Sex: Male - Phase: treatment

Dose Group	Animal Number	day 239	day 246	day 253
G 4 / M 0.05mg/l	011	27	28	29
	012	26	27	29
	013	27	27	29
	Mean	27	27	29
	S.D.	0.6	0.6	0.0
	N	3	3	3

day 239 = day 1  
day 246 = day 8  
day 253 = day 15

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Study 2246 SN3

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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
in Mice**Individual Body Weights - BW / Body Weights [g]**

Sex: Female - Phase: treatment

Dose Group	Animal Number	day 239	day 246	day 253
G 4 / F 0.05mg/l	014	22		NS
	015	20	22	24
	016	20		NS
	Mean	21	22	24
	S.D.	1.2		
N	3	1	1	

NS = No More Scheduled

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 Study 2246 SN4

1  
 November 17, 2010 14:46  
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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
 in Rats

**Individual Body Weights - BW / Body Weights [g]**

Sex: Male - Phase: treatment

Dose Group	Animal Number	day 239	day 246	day 253
G 4 / M 0.05mg/l	001	182	185	207
	002	192	192	206
	003	188	188	218
	Mean	187	188	210
	S.D.	5.0	3.5	6.7
	N	3	3	3

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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
in Rats

**Individual Body Weights - BW / Body Weights [g]****Sex: Female - Phase: treatment**

Dose Group	Animal Number	day 239	day 246	day 253
G 4 / F 0.05mg/l	004	120	119	132
	005	138	138	148
	006	133	131	142
	Mean	130	129	141
	S.D.	9.3	9.6	8.1
	N	3	3	3

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**ACUTE NOSE-ONLY INHALATION TOXICITY STUDY OF VANADIUM PENTOXIDE IN MICE**

TEST ARTICLE	TARGET CONC.	SPECIES	MALES [DEAD/N]		FEMALES [DEAD/N]	
V2O5	0.05 mg/l <sup>a</sup>	MOUSE	0/3	DAYS	2/3	DAYS
			ANIMAL NO.	ON TEST	ANIMAL NO.	ON TEST
			11	15	14	4
			12	15	15	15
			13	15	16	5
			X=	15	X=	8

<sup>a</sup> The inhalation exposure was conducted on 11/3/2010

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**ACUTE NOSE-ONLY INHALATION TOXICITY STUDY OF VANADIUM PENTOXIDE IN RATS**

<b>TEST ARTICLE</b>	<b>TARGET CONC.</b>	<b>SPECIES</b>	<b>MALES [DEAD/N]</b>		<b>FEMALES [DEAD/N]</b>	
V2O5	0.05 mg/l <sup>a</sup>	RAT	0/3	<b>DAYS</b>	0/3	<b>DAYS</b>
			<b>ANIMAL NO.</b>	<b>ON TEST</b>	<b>ANIMAL NO.</b>	<b>ON TEST</b>
			1	15	4	15
			2	15	5	15
			3	15	6	15
			<b>X=</b>	15	<b>X=</b>	15

<sup>a</sup> The inhalation exposure was conducted on 11/3/2010

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**ACUTE NOSE-ONLY INHALATION TOXICITY STUDY OF VANADIUM PENTOXIDE IN MICE**  
Individual Animal Data

Gross Necropsy Observations

<u>Animal No.</u>	<u>Sex</u>	<u>Necropsy Observation</u>
11	M	No Gross Lesion
12	M	No Gross Lesion
13	M	No Gross Lesion
14	F	No Gross Lesion
15	F	No Gross Lesion
16	F	No Gross Lesion

The inhalation exposure was conducted on 11/3/2010

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**ACUTE NOSE-ONLY INHALATION TOXICITY STUDY OF VANADIUM PENTOXIDE IN RATS**  
Individual Animal Data

Gross Necropsy Observations

<u>Animal No.</u>	<u>Sex</u>	<u>Necropsy Observation</u>
1	M	No Gross Lesion
2	M	No Gross Lesion
3	M	No Gross Lesion
4	F	No Gross Lesion
5	F	No Gross Lesion
6	F	No Gross Lesion

The inhalation exposure was conducted on 11/3/2010

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1

Study 2246 SN3

November 18, 2010 08:25

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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
in Mice**INDIVIDUAL\_SIGNS - Clinical Signs**

Sex: Male - Phase: treatment

Dose Group	Animal Number	Sign Type	Sign	Modifier	Remark	First Day	Last Day	Duration [Days]	
G 4 / M 0.05mg/l	011	general	wet inguinal fur			239	239	1	
		general	material around the nose	color: yellow		239	239	1	
		normal	normal			240	253	14	
		fate	terminal sacrifice			253	253	1	
	012	general	wet inguinal fur				239	239	1
		general	material around the nose	color: yellow			239	239	1
		normal	normal				240	253	14
		fate	terminal sacrifice				253	253	1
	013	general	wet inguinal fur				239	239	1
		general	material around the nose	color: yellow			239	239	1
		normal	normal				240	253	14
		fate	terminal sacrifice				253	253	1

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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
in Mice

**INDIVIDUAL\_SIGNS - Clinical Signs**

Sex: Female - Phase: treatment

Dose Group	Animal Number	Sign Type	Sign	Modifier	Remark	First Day	Last Day	Duration [Days]	
G 4 / F 0.05mg/l	014	general	wet inguinal fur			239	239	1	
		general	material around the nose	color: yellow		239	241	3	
		general	hypoactive			241	241	1	
		fate	found dead			242	242	1	
	015	general	wet inguinal fur				239	239	1
		general	material around the nose	color: yellow			239	240	2
		normal	normal				241	253	13
		fate	terminal sacrifice				253	253	1
	016	general	wet inguinal fur				239	239	1
		general	material around the nose	color: yellow			239	242	4
		general	hypoactive				241	242	2
		fate	found dead				243	243	1

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 Study 2246 SN4

1  
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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
 in Rats

**INDIVIDUAL\_SIGNS - Clinical Signs**

Sex: **Male** - Phase: **treatment**

Dose Group	Animal Number	Sign Type	Sign	Modifier	Remark	First Day	Last Day	Duration [Days]	
G 4 / M 0.05mg/l	001	general	wet inguinal fur			239	239	1	
		general	material around the nose	color: yellow		239	244	6	
		general	redness around the eyes			240	240	1	
		general	diarrhea	severity: present		240	240	1	
		general	material around the nose	color: black		240	240	1	
		general	discolored inguinal fur	color: brown		241	244	4	
		normal	normal			245	253	9	
		fate	terminal sacrifice			253	253	1	
	002	general	material around the nose	color: yellow			239	244	6
		general	redness around the eyes				240	240	1
		general	redness around nose fur				240	240	1
		general	diarrhea	severity: present			240	240	1
		normal	normal				245	253	9
		fate	terminal sacrifice				253	253	1
	003...	general	wet inguinal fur				239	239	1
		general	material around the nose	color: yellow			239	244	6
		general	redness around the eyes				240	240	1
		general	redness around nose fur				240	240	1

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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
 in Rats

**INDIVIDUAL\_SIGNS - Clinical Signs**

Sex: Male - Phase: treatment

Dose Group	Animal Number	Sign Type	Sign	Modifier	Remark	First Day	Last Day	Duration [Days]
G 4 / M 0.05mg/l	...003	general	diarrhea	severity: present		240	240	1
		general	discolored inguinal fur	color: brown		241	244	4
		normal	normal			245	253	9
		fate	terminal sacrifice			253	253	1

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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
 in Rats

**INDIVIDUAL\_SIGNS - Clinical Signs**

Sex: Female - Phase: treatment

Dose Group	Animal Number	Sign Type	Sign	Modifier	Remark	First Day	Last Day	Duration [Days]	
G 4 / F 0.05mg/l	004	general	wet inguinal fur			239	239	1	
		skin/fur	discoloration	location: head, dorsal, left, color: yellow		239	240	2	
		skin/fur	discoloration	location: head, dorsal, right, color: yellow		239	240	2	
		general	material around the nose	color: yellow		239	244	6	
		general	redness around the eyes			240	240	1	
		general	redness around nose fur			240	240	1	
		general	diarrhea	severity: present		240	240	1	
	general	discolored inguinal fur	color: brown		241	244	4		
	normal	normal			245	253	9		
	fate	terminal sacrifice			253	253	1		
	005	general	wet inguinal fur				239	239	1
		general	material around the nose	color: yellow			239	243	5
		general	redness around the eyes				240	240	1
		general	redness around nose fur				240	240	1
general		diarrhea	severity: present			240	240	1	
general		discolored inguinal fur	color: brown			241	244	4	
normal		normal				245	253	9	
fate	terminal sacrifice				253	253	1		

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Study 2246 SN4

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Acute Nose-Only Inhalation Toxicity Study of Granular Vanadium Pentoxide  
in Rats

**INDIVIDUAL\_SIGNS - Clinical Signs**

Sex: Female - Phase: treatment

Dose Group	Animal Number	Sign Type	Sign	Modifier	Remark	First Day	Last Day	Duration [Days]
G 4 / F 0.05mg/l	006	general	wet inguinal fur			239	239	1
		general	material around the nose	color: yellow		239	244	6
		general	redness around the eyes			240	240	1
		general	redness around nose fur			240	240	1
		general	diarrhea	severity: present		240	240	1
		general	discolored inguinal fur	color: brown		241	244	4
		normal	normal			245	253	9
		fate	terminal sacrifice			253	253	1

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